

**Cross Connection Control and  
Backflow Prevention Program  
&  
Utility Billing Process  
&  
Customer Requested  
Leak Checks**

**Council Worksession  
November 26, 2012**

# Agenda

- Cross Connection Control and Backflow Prevention Program including Process and Procedure
- Utility Billing Process and Procedure
- Customer Requested Leak Checks

# Purpose of Cross Connection Backflow Program

The purpose of a cross connection and backflow control program is to ensure that **potable water is safe to drink** by verifying that no potential or actual cross connections with non-potable water exist.

# Legislation

- EPA's Safe Drinking Water Act of 1984
- Virginia Department of Health, Waterworks Regulations

# Types of Cross Connections

- Backflow
- Back siphonage
- Back pressure

# Common Cross Connections

- Wash basins and service sinks
- Laboratory equipment
- Irrigation or lawn sprinkler systems
- Swimming pools and spas
- Fire sprinkler systems
- Auxiliary water supplies (wells, storage tanks and second feeds)
- Chemical feed equipment
- Attachment to hoses to apply weed killer/fertilizer or to flush antifreeze
- Food and beverage processing equipment
- Ornamental fountains
- Boilers
- Hose bibs

# Types of Backflow Preventers

Five basic devices are used to protect against cross connections:

1. Air gaps
2. Atmospheric vacuum breakers
3. Pressure vacuum breakers
4. Double check valves
5. Reduced-pressure principle backflow preventers or reduced pressure zones.



# Air Gap Separation





# BACKFLOW DEVICES

Single Checks

Dual Checks

Atmospheric Vacuum Breakers

Hose Bibb Vacuum Breakers





# Pressure Vacuum Breaker Assembly





# Double Check Valve Assembly



# Reduced Pressure Backflow Assembly





# Program Statistics - 2012

- 15,000+ water and sewer accounts
- 2,216 testable devices
  - 1,222 Residential irrigation systems
  - 67 Commercial irrigation systems
- Less than 20 disconnected for non-compliance per year.

# Testing Notification

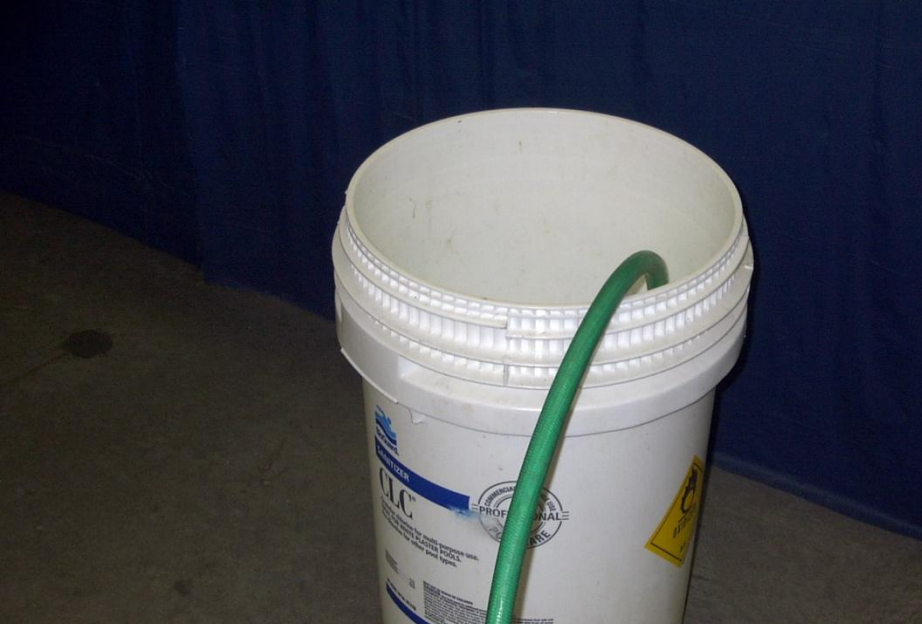
- 1<sup>st</sup> notice/letter in mail (annual test reminder)
- 2<sup>nd</sup> notice/letter in mail
- 1<sup>st</sup> Door hanger
- 2<sup>nd</sup> Door hanger



# Recommendations to Existing Program

- Provide public education to certified testers and customers.
- Evaluation of program by third party.
- Review of existing customer service outreach
  - Letters
  - Provide phone call prior to disconnect.





# Questions and Answers



# Utility Billing



# Utility Billing Process

- Six districts billed quarterly.
- Bill due within 30 days.
- 10% Late penalty
- Final reminder/past due notice
- Discontinuance of water service

# Payment Plans

- A payment plan may be requested.
- Request by e-mail, phone or walk in.
- Payment plan does not waiver 10% late fee.
- Business friendly - one time courtesy notification.

# Statistics

District	100	200	300	400	500	600
Billed	1694	1519	1810	3713	1895	4547
Reminder	185	169	289	424	264	584
Door Hanger Printed	51	55	TBD	75	72	193
Disconnect	36	37	TBD	44	56	90
% Unpaid & disconnect	2.1%	2.4%	TBD	1.2%	3.0%	2.0%



# Enhancements

- Online account and bill look up - January 2013.
- Online account usage - April 2013.
- Online bill payments
- E-Bill

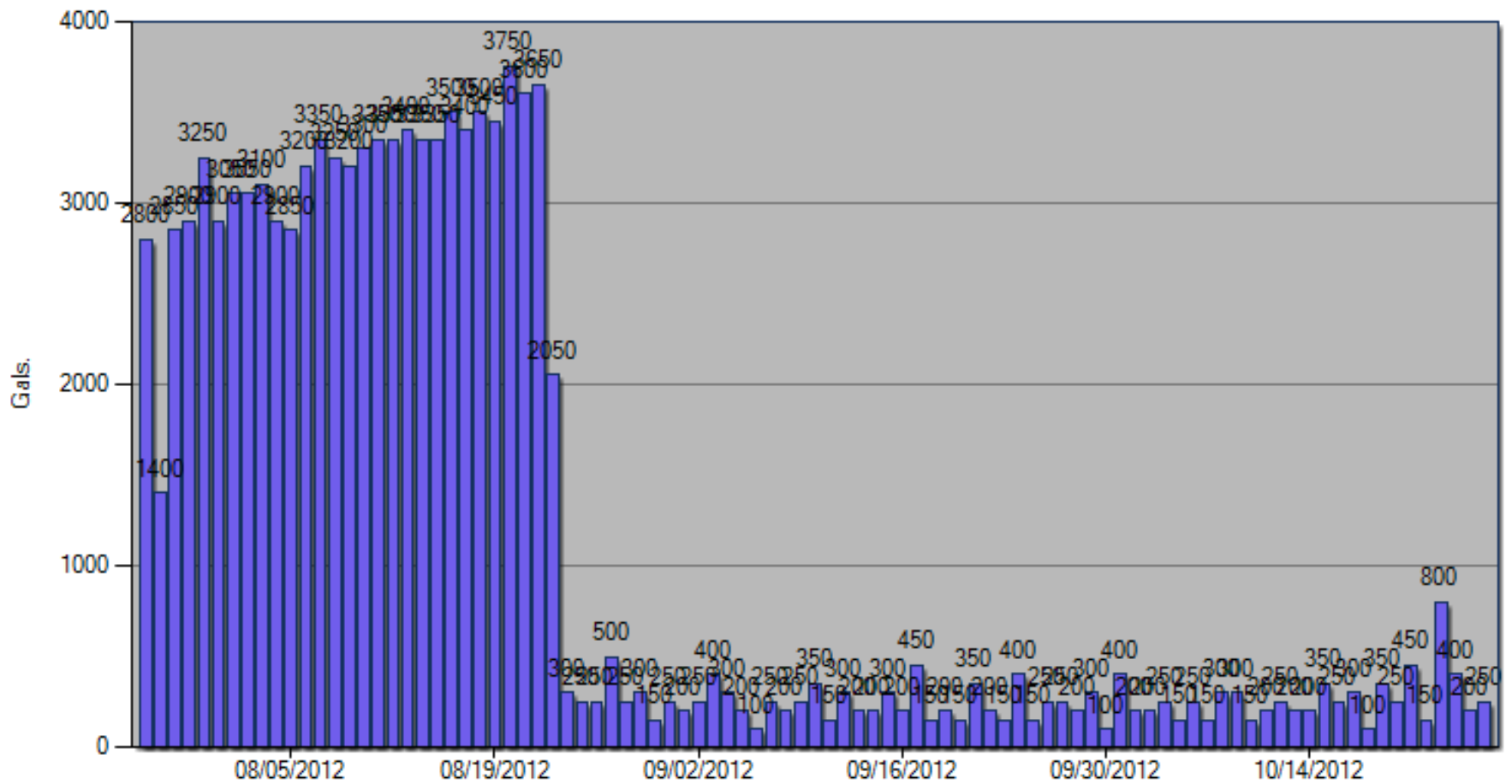
# Questions and Answers

# Customer Requested Leak Check

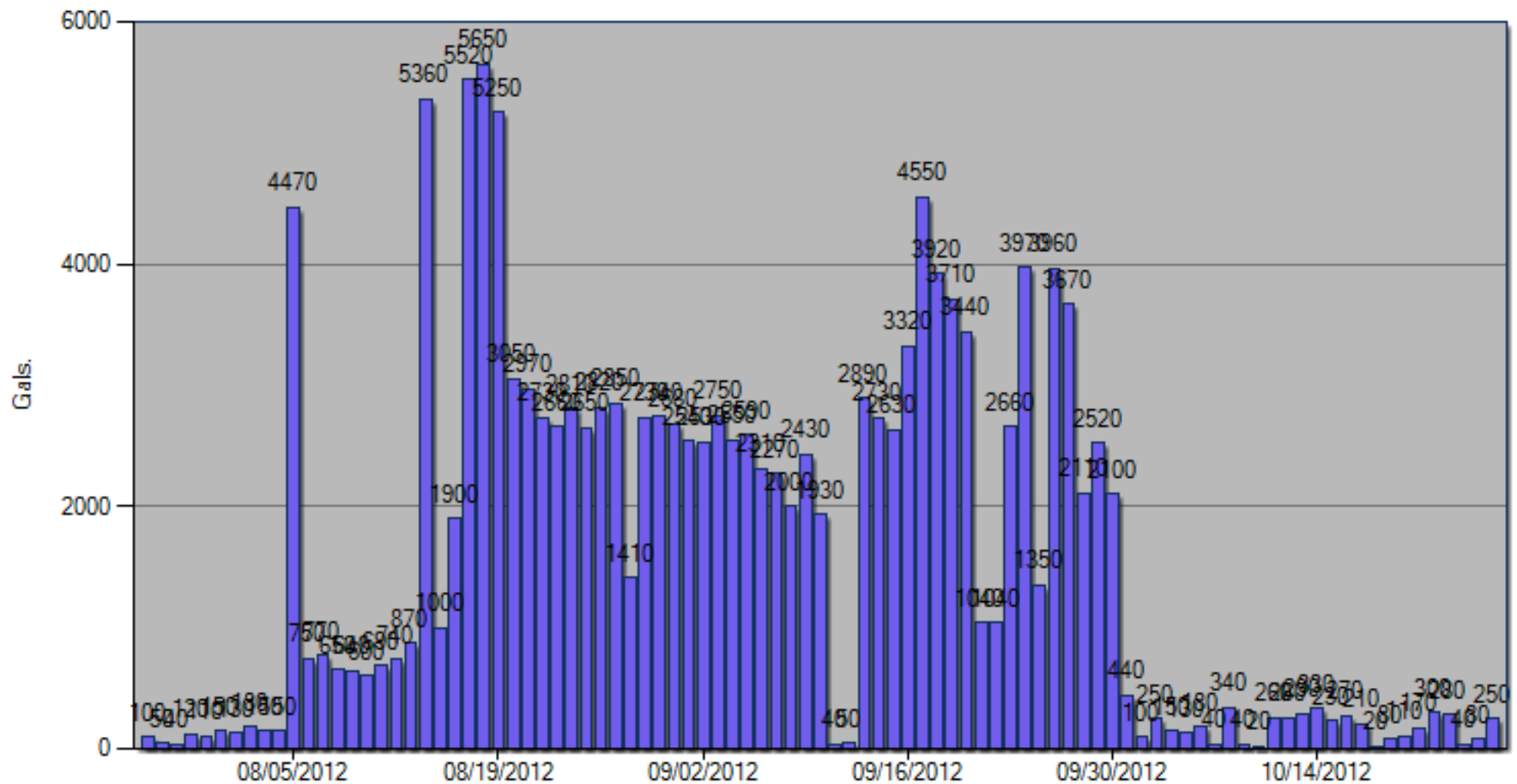
# Sec. 34-71: Customer Requested Leak Check

- Inquiry of high usage.
- Staff uses past consumption history and daily usage.
- Based on research and institutional knowledge, if requested by customer, staff explains the possibility of a leak check charge.

## Daily Consumption, 07/26/2012 to 10/26/2012

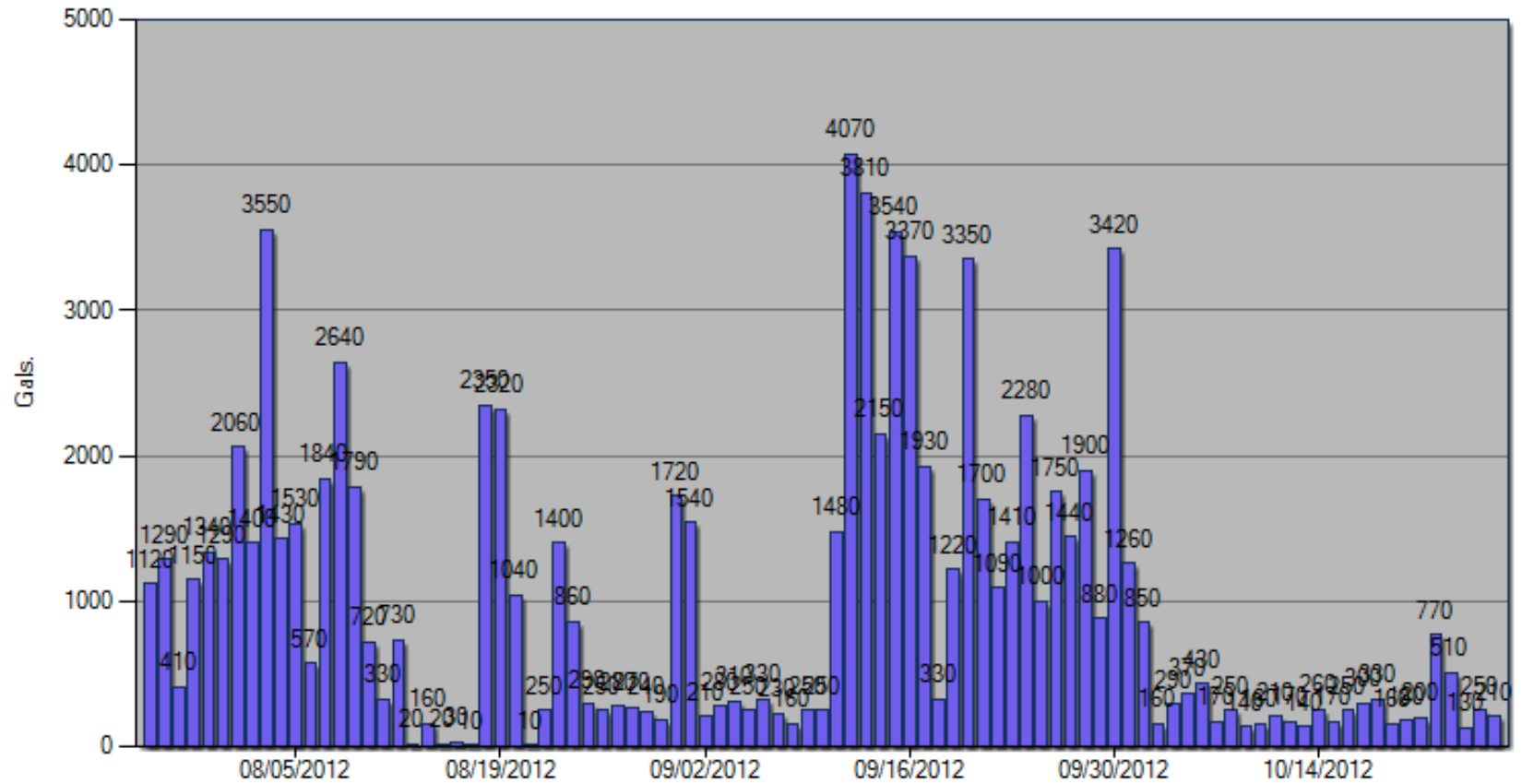


Daily Consumption, 07/26/2012 to 10/26/2012

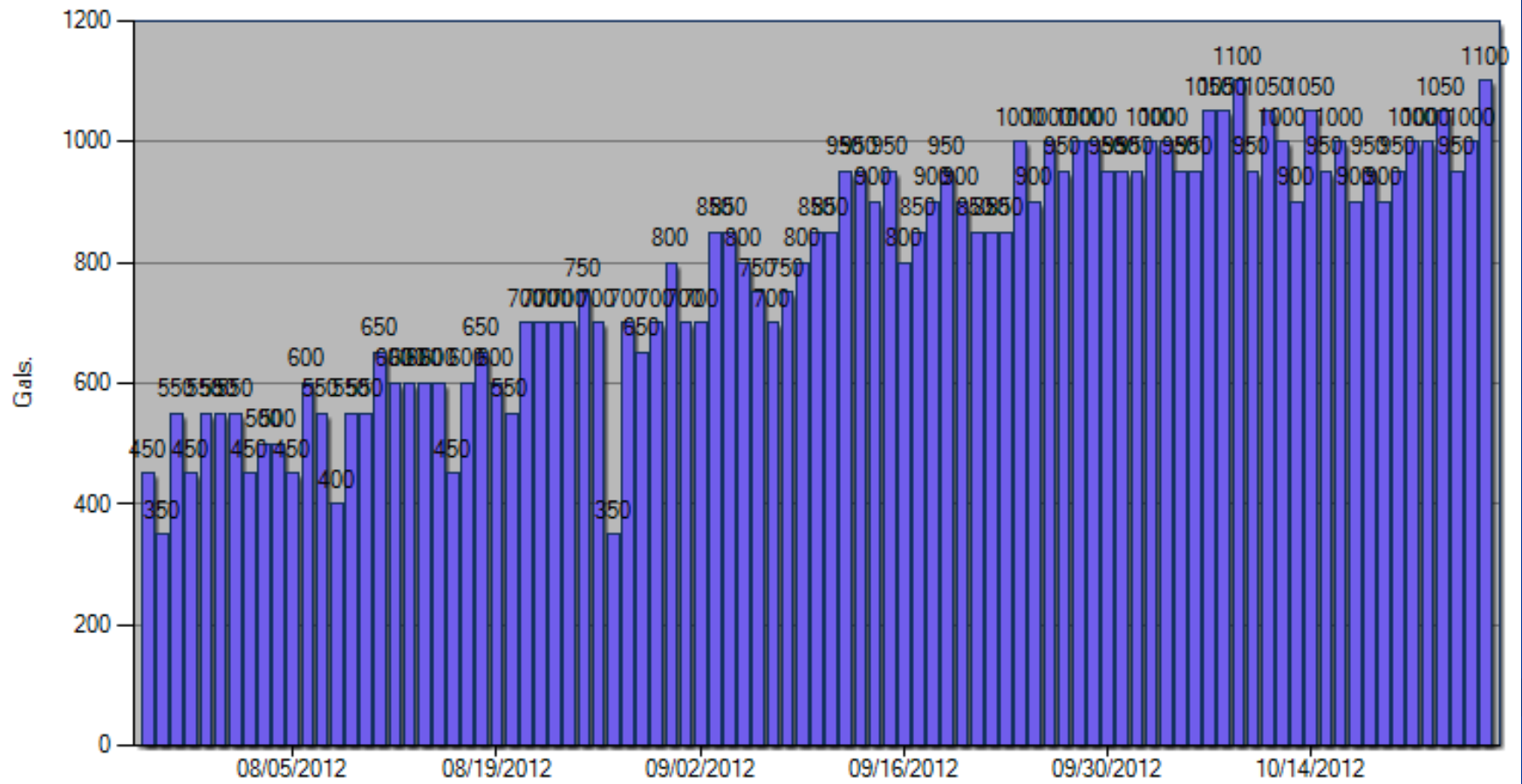




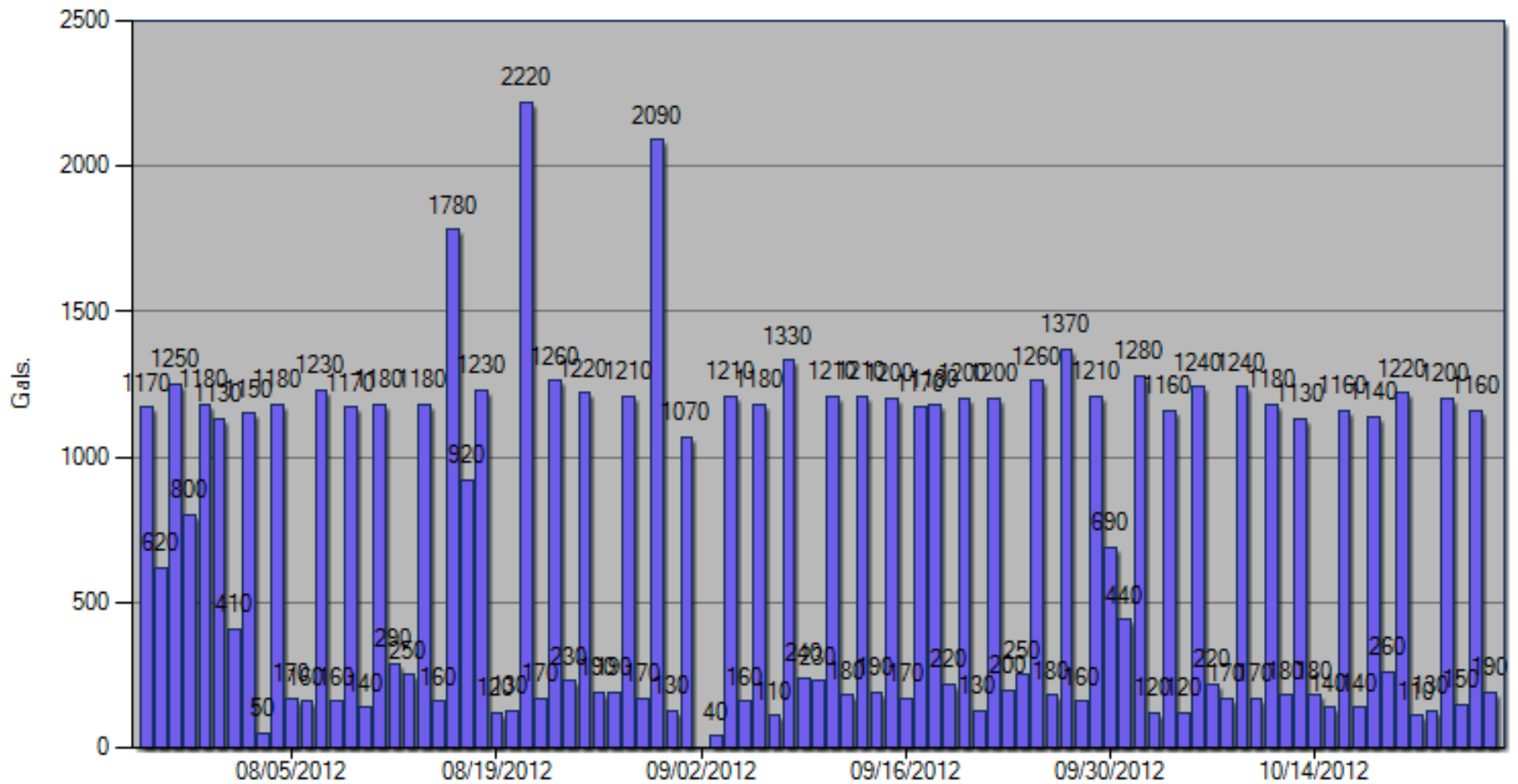
# Daily Consumption, 07/26/2012 to 10/26/2012



Daily Consumption, 07/26/2012 to 10/26/2012



# Daily Consumption, 07/26/2012 to 10/26/2012



# Questions and Answers